

**REMARKS**

Applicant thanks the Examiner for his thoughtful review of the present application.  
The status of the claims is as follows:

- a. **Claims 1-30** are **Pending** in the present application.
- b. **Claims 11, 12, 21 and 24-30** are withdrawn from consideration.
- c. **Claims 1, 3, 13, 14 and 17** are rejected.
- d. **Claims 4-10, 15-16, 18-20 and 22-23** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and intervening claims.

I. **ARGUMENT**

**1. Claim Rejections - 35 U.S.C. §102**

a. **Rejections of Claims 1 and 13 under 35 U.S.C. §102(b) (076 Reference)**

We respectfully remind the Examiner that in order to anticipate a claim, US Patent 5,877,076 to Dai (hereinafter *Dai*) must teach **every element of the claim** and ***"the identical invention must be shown in as complete detail as contained in the ... claim."*** MPEP 2131 citing *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 2 USPQ2d 1051 (Fed. Cir. 1987) and *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913 (Fed. Cir. 1989) (emphasis added).

The Applicant respectfully traverses the rejection of **Claims 1 and 13** because all of the elements of independent **Claims 1 and 13** are not taught or suggested by *Dai*, as emphasized by the recited claim elements set forth below.

Independent **Claim 1** recites a method for forming a semiconductor device comprising:

forming a 3-dimensional (3D) pattern in a substrate; and  
depositing at least one material over the substrate in accordance with desired characteristics of the semiconductor device.

Independent **Claim 13** recites a system for forming a semiconductor device comprising:

means for forming a 3-dimensional (3D) pattern in a substrate; and  
means for depositing at least one material over the substrate in accordance with desired characteristics of the semiconductor device.

The Examiner states that the *Dai* reference anticipates the present invention. Applicant respectfully disagrees and asserts that ***the Dai reference does not disclose forming a 3-dimensional (3D) pattern in a substrate as recited in claims 1 and 13 of the present invention.*** (Emphasis added.) *Dai* discloses a method for forming dual damascene interconnections in semiconductor chips through the use of opposite type two-layered photoresist process. A silicon substrate is provided having a composite layer comprising a first layer of dielectric separated from a second layer of dielectric by an intervening intermediate layer of silicon nitride. Then, a layer of positive (P-type)

chemical amplification resist (CAR) is deposited over the composite dielectric layer. The P-type resist is next line patterned by exposing and developing it through a dark field mask. This is followed by cross-linking the remaining P-type resist by performing a hard-bake. An opposite polarity, namely, a negative (N-type) CAR is next formed over the opposite P-type resist, and hole patterned through a clear field mask.

Because of cross-linking, the P-type resist is not affected during hole patterning of the opposite N-type resist. The hole pattern is next transferred by dry etching into the top dielectric layer and then into the intervening silicon nitride layer in the composite layer. The line pattern in the P-type CAR layer is etched into the top dielectric layer at the same time the hole pattern is transferred from the top dielectric layer into the bottom dielectric layer by the same etching process. The photoresist layers are then removed and the dual damascene structure thusly formed is filled with metal forming the line trench and hole interconnection on the semiconductor substrate.

While *Dai* discloses a substrate layer (110), the *Dai* reference does not disclose forming a 3-dimensional (3D) pattern in a substrate as recited in claims 1 and 13 of the present invention. The Examiner asserts that *Dai* discloses forming a 3-dimensional pattern (161', 151') in a substrate. Applicant respectfully disagrees. *The pattern(s) 161', 151' that the Examiner references are not formed in the substrate (110).* The patterns are formed in the composite dielectric insulation layers 120, 130, 140 (see Figure 3j, Dai). Consequently, *Dai* does not teach or suggest forming a 3-dimensional (3D) pattern in a substrate as recited in claims 1 and 13 of the present invention.

Since *Dai* does not teach or suggest forming a 3-dimensional (3D) pattern in a substrate as recited in claims 1 and 13 of the present invention, the *Dai* reference does not teach or suggest each element of independent Claims 1 and 13. Accordingly, the rejection of Claims 1 and 13 under 35 U.S.C. §102(b) should be withdrawn.

## **2. Claim Rejections - 35 U.S.C. §103**

The standard for making an obviousness rejection is currently set forth in MPEP 706.02(j):

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of

ordinary skill in the art, to modify the references or to combine reference teachings. **Second**, there must be a reasonable expectation of success. **Finally**, the prior art reference (or references when combined) must teach or suggest all the claim limitations. **The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.** (emphasis and formatting added) MPEP § 2143, *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)

The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a **convincing line of reasoning** as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). (emphasis added).

See also, *KSR International Co. v. Teleflex Inc.*, No. 04-1350, 550 U.S. \_\_\_\_ (2007).

The Applicant respectfully traverses the rejection of **Claims 3, 14 and 17** as being unpatentable over US Patent **5,877,076 to Dia** in view of US Patent **6,861,365 to Taussig et al.** **Claims 3, 14 and 17** depend from independent **Claims 1 and 13** respectively and inherit all of their limitations. Therefore, **Claims 3, 14 and 17** are also patentably distinct in light of US Patent **5,877,076 to Dia** in view of US Patent **6,861,365 to Taussig et al.** and the rejections of **Claims 3, 14 and 17** under 35 U.S.C. §103(a) ought to now be withdrawn.

## **II. Allowable Subject Matter**

The Examiner has indicated that **Claims 4-10, 15-16, 18-20 and 22-23** are objected to as being dependent upon a rejected base claim, but would be allowed if rewritten in independent form including all of the limitations of the base claim. Applicant appreciates Examiner's findings. In light of the above remarks concerning the lack of anticipation and failure to properly support a finding of obviousness, applicant contends that the allowability of **Claims 4-10, 15-16, 18-20 and 22-23** remains unchanged, but that a re-write for independent standing is no longer necessary.

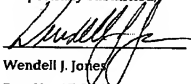
iii. **CONCLUSION**

Applicant now believes the present case to be in condition for allowance. Therefore, the Applicant respectfully requests a Notice of Allowance for this application from the Examiner.

It is believed that all of the pending Claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending Claims (or other Claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any Claim, except as specifically stated in this paper, and the amendment of any Claim does not necessarily signify concession of unpatentability of the Claim prior to its amendment.

Applicant believes that no fees are currently due, however, should any fee be deemed necessary in connection with this Amendment and Response, the Commissioner is authorized to charge deposit account 08-2025.

Respectfully submitted,



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